



Graphic Applications in the View of Energy Star 2007

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Energy Star Program Requirements for Computers

- Draft 2 spec has classified several Groups
 - Desktop computer
 - Notebook
 - Workstation



Differentiating Desktops from Workstations

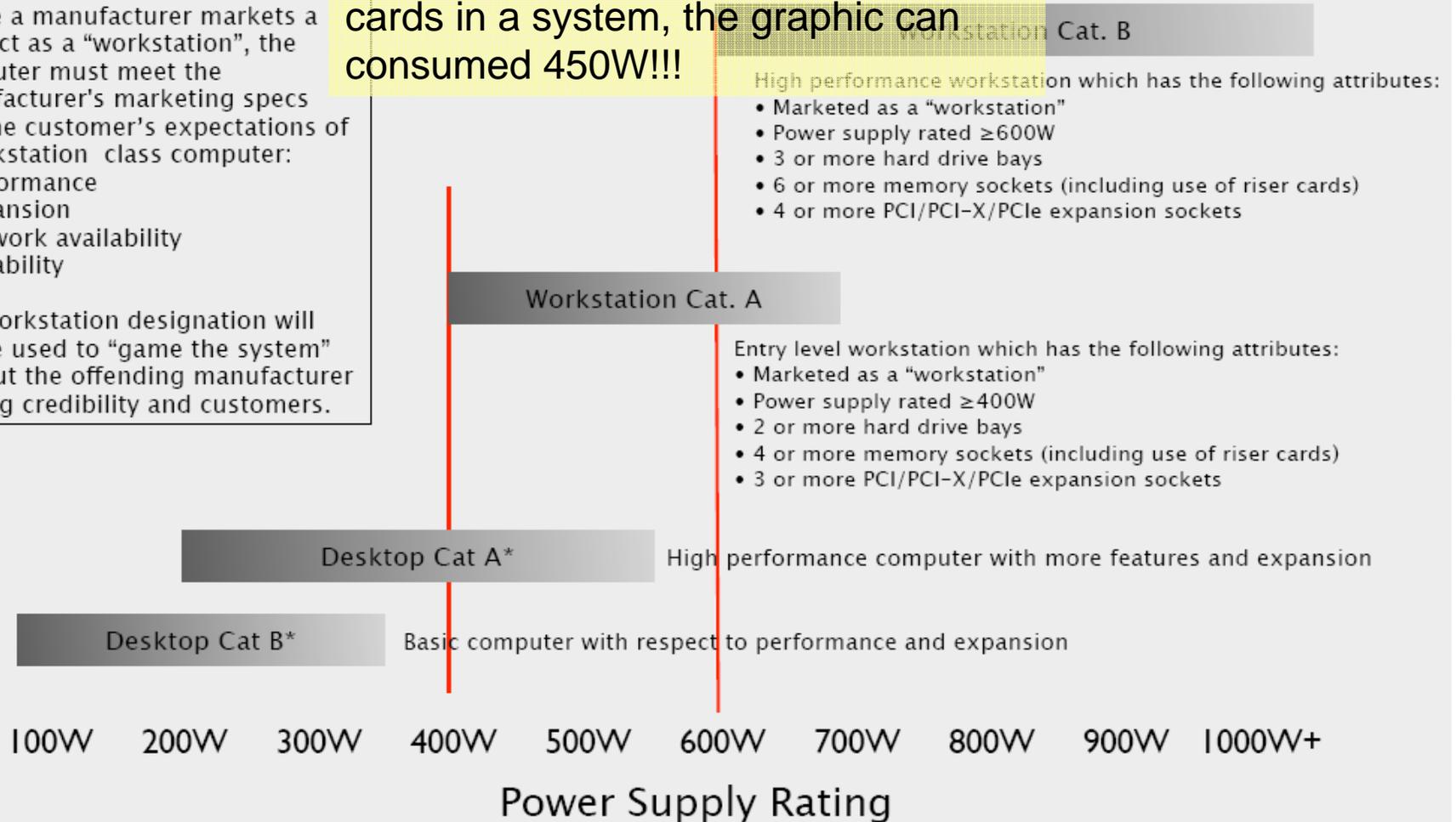
Based on PCI-e, high end graphic card in slots can be 225W. So using 2 cards in a system, the graphic can consumed 450W!!!

Note:

Before a manufacturer markets a product as a "workstation", the computer must meet the manufacturer's marketing specs and the customer's expectations of a workstation class computer:

- Performance
- Expansion
- Network availability
- Reliability

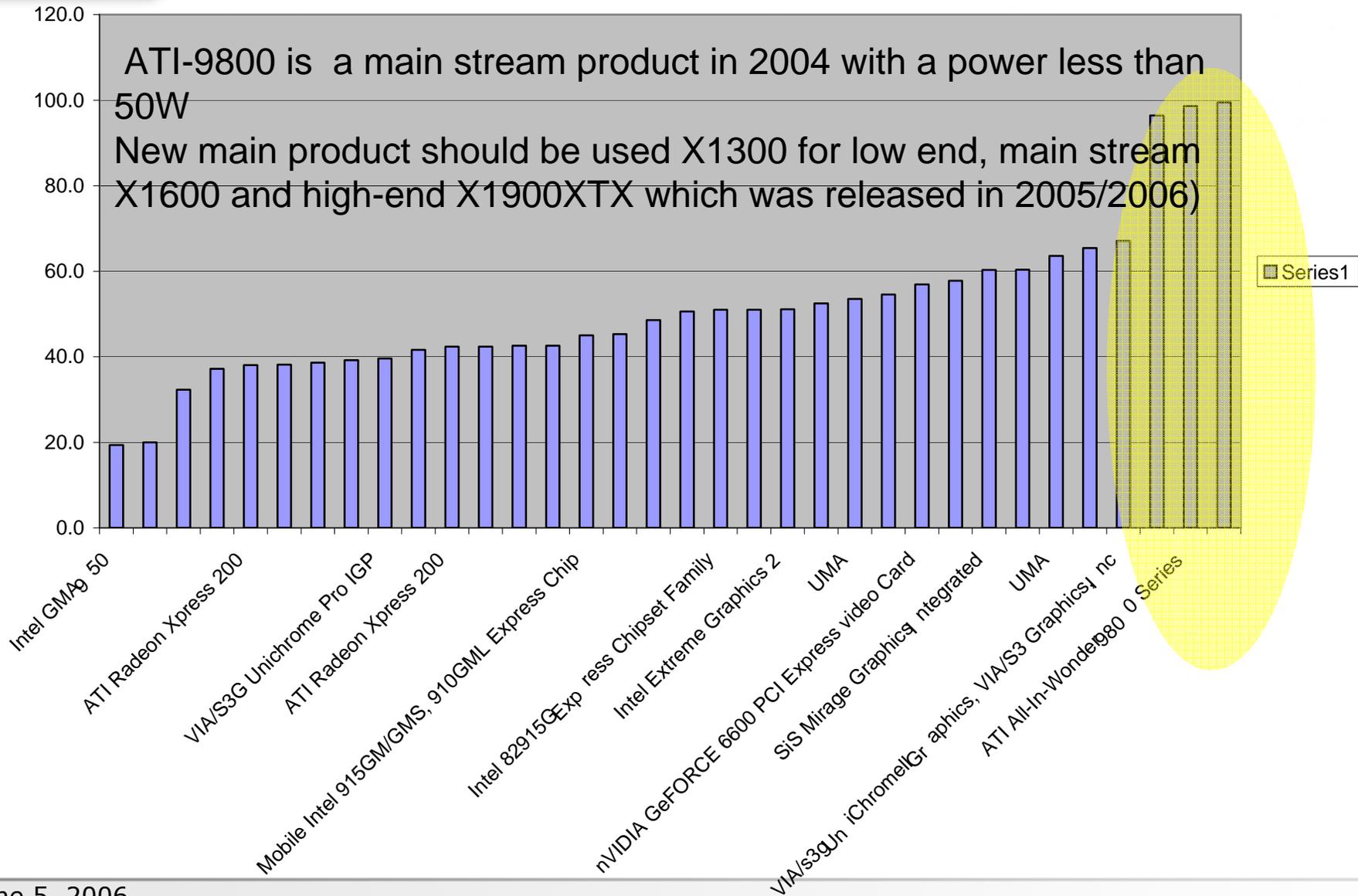
The workstation designation will not be used to "game the system" without the offending manufacturer loosing credibility and customers.



* Category designations should be reversed for desktops



Idle Power for desktop with Graphic Feature





Concerns on Desktop Group

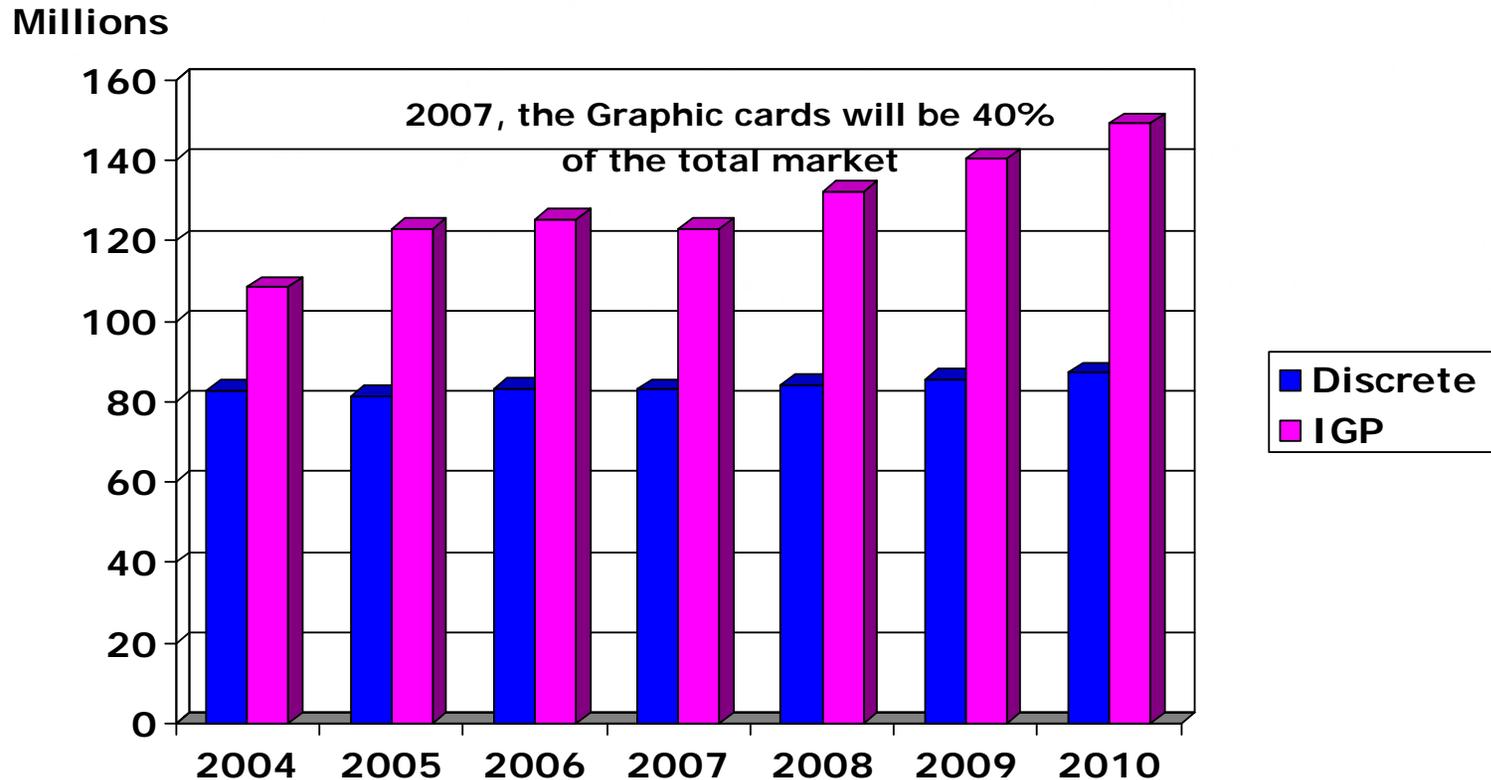
- The EPA proposal does not differentiated the Desktop computers based on the graphic performance which is becoming a key factor on the computer marketing features.
- May 18 meeting of EPA the committee informed with different classifications of the graphic card based on PCI-e
 - Integrated graphic with the Chipset (INTEL INFORM the EPA that the market of that is 80% and the 15% to 20% is rest of the add-in graphic card....ATI- need to endorse or propose other number)
 - Low profile single slot PCI-e Add-in Card which has $\leq 25W$. In general this level has 128 MB Ram
 - Single slot PCI-e Add-in Card which has $\leq 75W$. In general this level has 128 MB Ram or 256 MB Ram
 - Dual slot PCI-e Add-in Card which has $\leq 225W$. In general this level has more than 256 MB Ram (new proposal)
 - Triple slot PCI-e Add-in Card which has $\leq 300W$. In general this level has more than 256 MB Ram (new proposal)
 - Multi Graphic cards which are already in progress for single and dual slot PCI-e cards



Concerns on Desktop Group

It is Important to indicate the market share of the ADD-in Graphic cards vs. integrated graphic based on External reference house

Worldwide Desktop Graphics Chip Market 2004 - 2010



Source: Mercury Research, 2006



What Can be Proposed for Desktop

- Desktop will have 3 categories
- Category A-consumer product desktop, low end and low cost product which has integrated graphic or graphic card with maximum power less than 30W: Idle power will be as is (<50W)
- Category B- Enterprise desktop for business and government use, : idle power will be based on more realistic date which has a graphic cards such as ATI X1600 and X1900 pro, i.e. which has a main stream graphic card with maximum power less than 100W
- Category C- High end consumer product desktop/ Enthuse /Gaming/special need of graphic applications. A system with graphic card with higher than 100W and/or multi graphic cards. idle power will be based on the active power of the system

ATI can help on producing data or supply cards to OEMs to conduct their independent test. Other approach (if the time is short), ATI supply the idle number for its products which will be added to the current measurement which was sent in the XL-sheet, see slide #4 and/or by total sum of the idle powers of the GPU's card, CPU, system Air movers, HD, OD..)



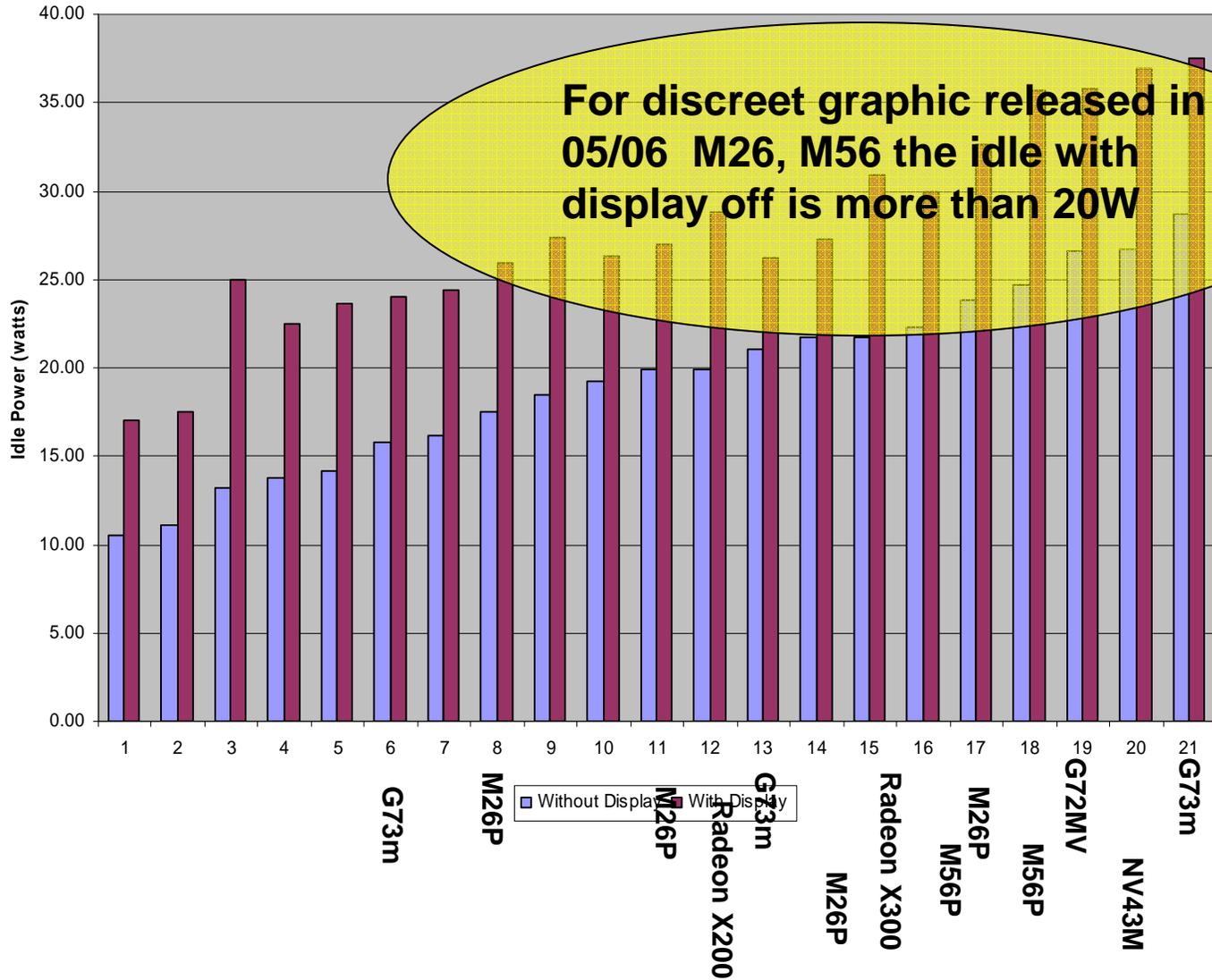
Concerns on Notebook Group

- The EPA proposal also does not differentiated the notebook computers based on the graphic performance which is becoming a key factor on the computer marketing features.



Idle Power for notebook

Idle Power for Notebooks



For discrete graphics released in 05/06 M26, M56 the idle with display off is more than 20W

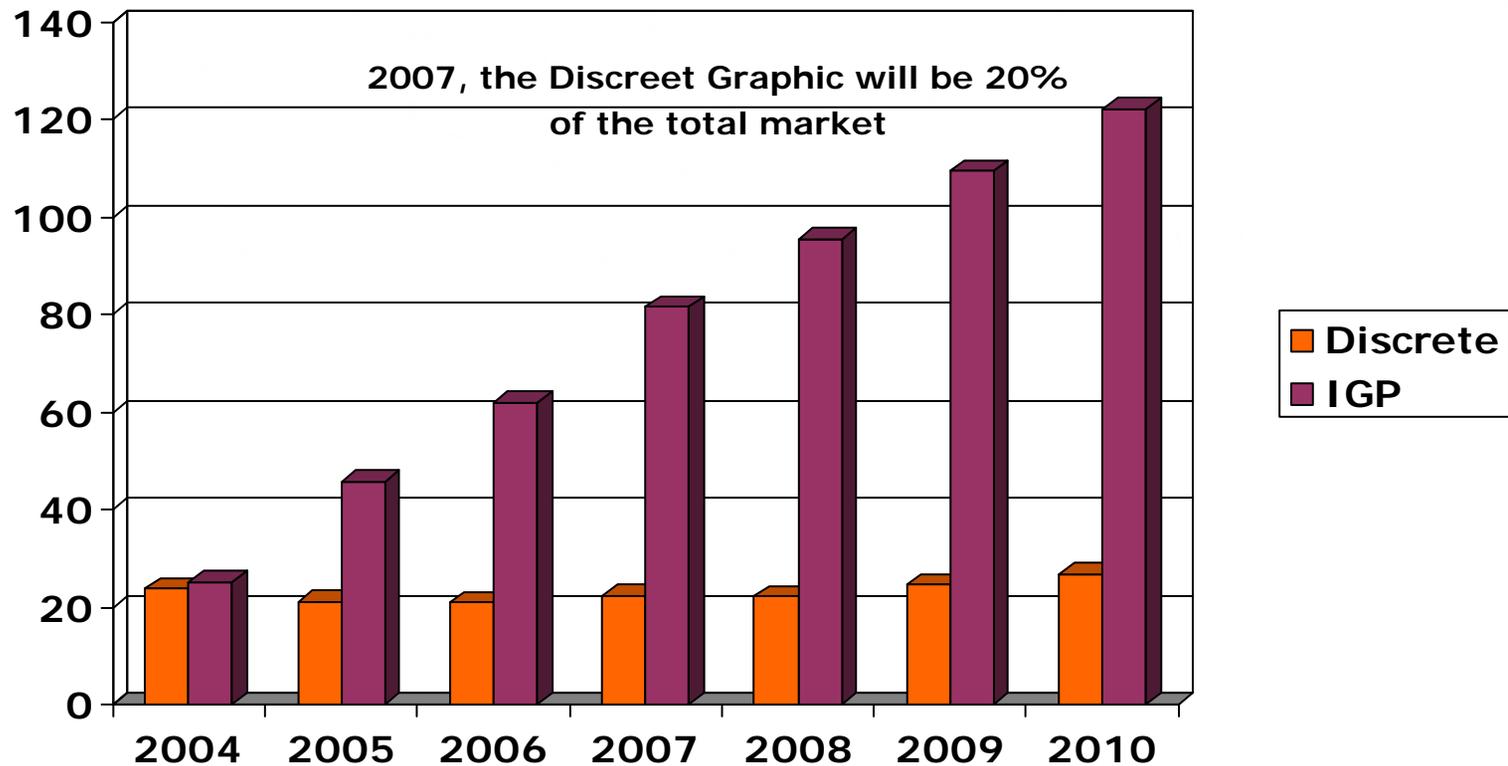


Concerns on Mobile Group

- It is Important to indicate the market share of the integrated graphic vs. discrete graphic based on External reference house

Worldwide Notebook Graphics Chip Market 2004 – 2010

Millions



Source: Mercury Research, 2006



What Can be Proposed for Mobile

- Notebook will have 2 categories
- Category A: consumer product Notebook-low cost product with an integrated graphic (idle is 20W)
- Category B: Enterprise Notebook with a discrete graphic processor for business use (Idle should be determine based on data for systems which has devices such M56, N68 and M58)

ATI can help on producing data or supply GPUs to OEMs to conduct their independent test. Other approach (if the time is short), ATI supply the idle number for its products which will be added to the current measurement on the top of the 20W propose # after removing the idle effect of the integrated graphic and/or by total sum of the idle powers of the GPU, CPU, Air mover, HD, OD..)